

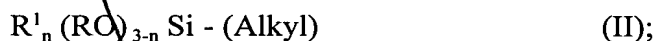
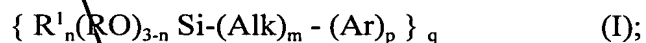
CLAIMS

1. An adsorbent, comprising:

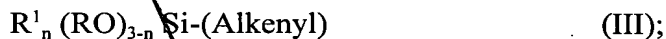
a pulverulent rubber, which contains at least one filler selected from the group consisting of natural filler, synthetic filler, organic filler, inorganic filler, and mixtures thereof.

2. The adsorbent according to claim 1, wherein said filler is present in an amount of 100 to 5000 phr.

3. The adsorbent according to claim 1, wherein said filler is a natural or synthetic filler selected from the group consisting of oxide filler, silicate filler, a precipitated or pyrogenic silica gel, and mixtures thereof, and wherein a surface of said filler is modified with one or more organosilicon compounds having any of the formulas (I-III):



or



wherein:

B: -SCN, -SH, -Cl, -NH₂ (when q = 1) or -S_x- (when q = 2);

R and R¹: each independently represent a branched or nonbranched alkyl group with 1 to 4 carbon atoms or a phenyl group;

R: a branched or nonbranched C₁ to C₄ alkyl or C₁ to C₄ alkoxy group;

n: 0; 1 or 2;

Alk: a divalent straight-chain or branched hydrocarbon group with 1 to 6 carbon atoms;

m: 0 or 1;

Ar: an arylene group with 6 to 12 carbon atoms;

p: 0 or 1, with the proviso that p, m and n are not simultaneously equal to 0,;

- 20B 31
- x: a number from 2 to 8;
- Alkyl: a monovalent straight-chain or branched saturated hydrocarbon group with 1 to 20 carbon atoms;
- Alkenyl: a monovalent straight-chain or branched unsaturated hydrocarbon group with 2 to 20 carbon atoms;

5 wherein the total amount of said filler does not exceed 5000 phr individually or in combination, and wherein said filler is permanently bound with the rubber.

4. The adsorbent according to claim 1, wherein said filler is permanently bound with said rubber.

5. The adsorbent according to claim 1, characterized in that said rubber comprises SBR rubber.

6. The adsorbent according to claim 1, wherein said filler comprises carbon black in an amount of 100 to 2000 phr.

7. The adsorbent according to claim 1, wherein said filler comprises rubber flour in an amount of 100 to 3000 phr.

8. The adsorbent according to claim 1, wherein said filler comprises sodium aluminosilicate in an amount of 100 to 3000 phr.

9. The adsorbent according to claim 1, wherein said filler comprises zeolite in an amount of 100 to 3000 phr.

10. The adsorbent according to claim 1, wherein said rubber comprises said filler in a total amount of 100 to 5000 phr.

11. The adsorbent according to claim 1, wherein said rubber has a particle-size distribution of 0.4 to 10 mm and a total pore volume of 1.0 to 4 ml/g.

12. An article or apparatus selected from the group consisting of a cushion, hose, suction boom, stationary bed column, suspension reactor, and fluidized bed reactor, comprising the adsorbent according to claim 1.

13. A process, comprising:

adsorbing at least one organic compound with the adsorbent according to claim 1.

14. The process according to claim 13, wherein said organic compound is at least one selected from the group consisting of nonpolar, poorly water-soluble, water-insoluble, light oil, heavy oil, and combinations thereof.

15. The process according to claim 13, wherein said organic compound is either emulsified, dissolved, or floating in water.

16. The process according to claim 13, further comprising separating said organic compound from said adsorbent.

17. The process according to claim 13, wherein said organic compound is at least one oil selected from the group consisting of a light oil or a heavy oil, and wherein said filler is present in an amount of 100 to 1000 phr.

18. The process according to claim 13, wherein said organic compound is soluble in water, and wherein said filler is present in an amount of greater than 1000 to less than or equal to 2000 phr.

19. The process according to claim 13, wherein said adsorbent is present in an article or apparatus selected from the group consisting of cushion, hose, suction boom, stationary bed column, suspension reactor, fluidized bed reactor, and combinations thereof.

20. The process according to claim 13, comprising contacting said adsorbent with water, said water being contaminated with said organic compound.